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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,349	01/31/2004	Jiansheng Tang	9257USA-NONP	8362
7590	03/25/2005		EXAMINER	
Suzanne Kikel NOVA Chemicals Inc. 400 Frankfort Road Monaca, PA 15061			EGWIM, KELECHI CHIDI	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/769,349	TANG ET AL.	
	Examiner	Art Unit	
	Dr. Kelechi C. Egwim	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 31 January 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 3-6,8-17 and 30-47 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,7 and 18-29 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) 1-47 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 020405.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-29, drawn to thermoplastic resin particles, classified in class 428, subclass 420.
 - II. Claims 30-31, drawn to a foam container made from the resin particles of Group I, classified in class 220, subclass 592.25.
 - III. Claims 32-45, drawn to a coating composition, classified in class 106, subclass 33.
 - IV. Claim 46, drawn to a method of improving the resistance to leakage of a foam container made with expandable thermoplastic resin particles, classified in class 427, subclass 445.
 - V. Claim 47, drawn to a method of improving the resistance to leakage of a foam container made with pre-expanded thermoplastic resin particles, classified in class 427, subclass 445.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the

instant case, the intermediate product is deemed to be useful in making articles other than containers and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Invention III is related to inventions I and II as mutually exclusive species in intermediate-final product relationships. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as mould release agents, lubricants, antistatic agents, etc., and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. Inventions IV and V are related to invention II as processes of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by materially different processes, as evidenced by Groups IV and V.

5. Inventions V and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01).

6. Invention III is related to Inventions IV and V as product and processes of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can be used in materially different processes of using that product, as evidenced by Groups IV and V.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

8. Because these inventions are distinct for the reasons given above and the search required for one Group is not required for the other(s), restriction for examination purposes as indicated is proper.

9. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

10. This application contains claims directed to the following patentably distinct species of the claimed invention:

Different species for the components of the coating composition are claimed between claim 3-18 and 37.

Applicant is required under 35 U.S.C. 121 to elect a single claimed species of the components of the coating composition for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 1 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims

readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

11. During a telephone conversation with Suzanne Kikel on 3/8/05, a provisional election was made with traverse to prosecute the invention of Group I and the species of the components of the coating composition wherein the coating composition consists of component a), b) and c), claims 1, 2, 7 and 18-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 3-6, 8-17 and 30-47 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions.

12. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority/Specification

13. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence(s) of the specification (37 CFR 1.78(a)(2) and (a)(5)).

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.

15. Claims 1, 2, 7, and 18-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16. Claim 1, from which the balance of the claims depend, is incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The claim is to particles, yet it recites that the (solid) particles contain a coating **composition** (not solid). Is applicant claiming resin particles swollen or embedded with a coating composition (where the coating composition is contained within the resin particles)? Is applicant claiming resin particle coated with a coating composition or containing a coating formed from a coating composition? The structural relationship between the resin particles and the coating or coating composition is indefinite.

17. Also, the term "higher fatty acids" in claim 1 is a relative term that renders the claim indefinite. The term "higher fatty acids" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how "high" the number of carbons must be in the fatty acids to qualify as "higher fatty acids" in the claims.

18. In addition, claim 29 recites "Thermoplastic resin particles of claim 1 wherein said coating composition covers said thermoplastic resin particles in an amount ...". As such, it is unclear the distinction between the claimed "thermoplastic resin particles" and the thermoplastic resin particles recited on line 3 of the claim, which is apparently a

component used in preparing the claimed "thermoplastic resin particles". As such, there is insufficient antecedent basis for "said thermoplastic resin particles" in the claim.

Claim Rejections - 35 USC § 102

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

20. Claims 1, 2 and 19-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda et al. (USPN 4,698,368), Sonnenberg et al. (USPN 4,785,022), Hurley et al. (USPN 5,919,530) or Sakoda et al. (USPN 6,277,491), and under 35 U.S.C. 102(e) as being anticipated by Imai et al. (JP 2002338725).

Each of Ikeda et al. (col. 2, lines 59-63 and col. 9, lines 41-45), Sonnenberg et al. (Example 1, col. 3, lines 50-58), Hurley et al. (col. 4, lines 40-63 and col. 5, line 40 to col. 6, line 33), Sakoda et al. (Example 1) and Takamusa et al. (abstract) teach expandable thermoplastic polystyrene particles coated with a composition comprising at least one of applicant's claimed components in the claim amounts.

Thus, the requirements for rejection under 35 U.S.C. 102(b or e) are met.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. or Hurley et al.

In col. 1, lines 45-52, Ikeda et al., above, additionally teach that it is known to coat the surface of expandable thermoplastic resin particles with wax in order to prevent coagulation of the particles, which would otherwise block particle conveying pipes or mold cavity charging holes, disturbing the molding process. Further, in col. 9, lines 24-29, Ikeda et al. also teach that it is recommended to cover the resin particles in advance with liquid polyethylene glycol as a spreading agent.

Each of Ikeda et al. or Hurley et al. differ from the claimed subject matter in that a single embodiment featuring all of applicant's claimed limitations is not explicitly recited. However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to arrive at applicant's invention because the claimed subject matter falls within the generic embodiments of the prior art and the person of ordinary skill in the art would have expected all the embodiments of the prior art to work successfully. A person of ordinary skill in the art at the time the invention was made would have expected such a combination to work in an additive or cumulative manner, *In re Kerkhoven*, 205 USPQ 1069 (CCPA 1980).

One of ordinary skill in the art would have found it *prima facie* obvious to determine a workable or even optimum range for the coating components. “[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980); “[W]here the general conditions of a claim are disclosed in the art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Conclusion

23. The following prior art are made of record, while not presently relied upon, as considered pertinent to applicant's disclosure: US 5194356, US 5798407 or US 6740697.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kelechi C. Egwim whose telephone number is (571) 272-1099. The examiner can normally be reached on M-T (7:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCE



KELECHI C. EGWIM PH.D.
PRIMARY EXAMINER